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I. INTRODUCTION

The present study has been prepared under a project which examines the role of the mineral sector in the development process of developing countries (MINDEV). The aim of the project is to identify those policies or instruments which are most likely to enhance the contribution of the non-fuel mineral sector to economic development and promote a broader-based and eventually self-sustaining process of development.

The rationale for the project stems from the fact that for most developing countries the exploitation of their natural resources, together with trade in the primary products derived therefrom, continue to provide the main basis for their economic growth. Even for developing countries that do not at present have any significant mineral sector activity within their territories, as is the case for many of the least developed countries, development of mineral resources may provide one of the few feasible ways of raising economic growth. This resource-based process of growth is often perceived as an export-oriented activity whereby primary commodities are exchanged by developing countries for the capital required to expand, diversify and eventually industrialize their economies. The development process is also affected, however, by the nature and extent of the feedback between the exploitation of a country's natural resources and other sectors of the domestic economy. The more extensive this feedback, the greater is likely to be the value of resource-based development for the country concerned. This issue is especially relevant to the exploitation of non-renewable resources, since feedback will necessarily cease as the resources are exhausted. At that time, the capital represented by the original mineral deposit should have been replaced by other forms of capital capable of yielding the same return.

Mineral sector policy in many developing countries is directed towards maximizing foreign exchange income; moreover, a high level of debt service payments, which is typical of many mineral producing developing countries, often dictates that foreign exchange earnings be given a high priority. This may be in conflict with a government's objective of securing as large a share as possible of the rent generated by mineral exploitation. Traditionally, governments of countries with large mineral sectors have sought to maximize their share of the rent in order to finance investment in sectors considered to be critical to long-term economic growth, such as infrastructure and sectors with strong production and consumption linkages, since the mineral sector in itself often provides limited opportunities for the development of such linkages. This strategy raises problems of economic policy which have been dealt with extensively in the economic literature[1]. These problems include:

The taxation problem, that is, how to maximize the government's share of the mineral rent without introducing distortions leading to a less than optimal extraction rate and without dissuading investment;

The macro-economic problem, or how to combine variations in income from mineral exploitation with macro-economic equilibrium;

The absorption problem, which consists of distributing the mineral income to other sectors, and which includes the choice of whether to increase investment or consumption.

The debate concerning "Dutch disease"[2] has focused on the last two problems. However,

the Dutch disease theory, at least as originally formulated, deals mainly with the problems that arise when a country experiences a sudden increase in foreign exchange income, usually from oil or mineral exports. From the perspective of developments during the 1980s, the reverse situation, that is, a sudden fall in foreign exchange earnings, is more relevant for many countries. This raises problems of structural adjustment that are just as serious, and often more so, than the problems associated with a boom. The same conceptual framework can however be applied in both cases, and it may be a truism to state that countries that have managed the upturn in export income well are usually better prepared to deal with the consequences of the downturn. The MINDEV project covers the three problems mentioned, as well as the associated problems of structural adjustment following a fall in mineral revenues.

Governments can, through micro-economic reform and regulatory measures, ensure that the weak production/consumption linkages between the mineral sector and the rest of the economy are strengthened, thus avoiding a situation where the mineral sector operates in isolation from the rest of the economy. Nevertheless, positive results can be expected from micro-economic reform only after macro-economic balance has been achieved[3]. For most mineral dependent economies in recent years, however, the problems of macro-economic management have become more acute and micro-economic policy has been given lower priority. This does not mean that linkages are unimportant: the flow of labour income, profits and foreign exchange which can be recycled into the economy can have a large positive impact in a situation of underemployment or foreign exchange constraints[4]. Nevertheless, in the absence of macro-economic stability, it is unlikely that such effects will materialize as durable benefits.

Work within the project is oriented towards the national level since the problems addressed are directly experienced and policies ultimately implemented at that level. This does not mean that the issue of a supportive international environment can be neglected, and one objective of the project is to point to areas of national policy where international support would appear to be critical.

A number of case studies on individual countries are carried out with a view to describing in detail the experiences of these countries and identifying the particular problems encountered. The case studies attempt to take into account both the general economic environment and government policies pertaining exclusively to the mineral sector. Depending on the circumstances of a particular country, including the size of the mineral sector relative to the rest of the economy, the main concern from the point of view of policy formulation may be on maintaining macro-economic equilibrium, or on management of the sector itself and its direct linkages to other sectors. Within the group of case study countries, there are countries illustrating both sets of concerns. The countries studied are Chile, the Dominican Republic, Indonesia, Morocco, Peru, Sri Lanka and Zimbabwe. The case studies are intended to supplement regional seminars held within the project, and to provide concrete illustrations and pointers for general conclusions.

The present study on the Dominican Republic focuses on the management of the mineral sector in a small country with only a few large mining operations. Of particular interest is whether the presence of these large operations has facilitated the development of other mineral sector activities. In addition, the role of mineral sector income, both in terms of foreign exchange and Government income, as a source of growth is discussed.

Information for the study was collected during three missions, from 25 October to 2 November 1990, from 4 to 5 November 1991, and from 5 to 9 June 1994. A list of persons interviewed appears in an annex.

Notes

1. See, for instance, A. Gelb et. al.: Oil Windfalls: Blessing or Curse, Oxford, 1988, and S. R. Lewis: Development Problems of the Mineral-Rich Countries, in Syrquin, Taylor, Westphal (eds): Economic Structure and Performance: Essays in Honour of Hollis B. Chenery, San Diego Academic Press, 1984.

2. The term "Dutch disease" refers to the boom-induced rise in the real exchange rate and the associated relative decline of non-mineral traded goods industries. It originally described the effects on the Netherlands economy of the offshore gas discoveries in the 1960s.

3. A study on mineral dependent developing countries recently prepared for the UNCTAD secretariat found that the direct and quantifiable effects of trade and industrial policy on economic growth were dominated by the macro-economic variables, in particular the variability in the real exchange rate (R. Auty, D. Evans: Trade and Industrial Policy for Sustainable Resource-Based Development: Policy Issues, Achievements and Prospects. UNCTAD/COM/23, Geneva 1993).

4. For instance, a study by M. Lasaga on Chile showed that an increase in copper production of 10 per cent leads to increased copper sector employment by 2 400 persons, or 0.1 per cent of the total labour force, and has only a small direct impact on output of other industries. However, when indirect macro effects are taken into account, the sustained increase in copper production causes an economy-wide increment of 50 000 employees, or 1.9 percent of the labour force. (M. Lasaga: The Copper Industry in the Chilean Economy: An Econometric Analysis. Lexington 1981, Heath Lexington Books. Quoted in F. Gerard Adams and Jere R. Behrman: The Linkage Effects of Raw Material Processing on Economic Development: a Survey of Modeling and Other Approaches. Journal of Policy Modeling, vol. 3, No. 3, October 1981, North Holland, N.Y.)

II. GENERAL ECONOMIC DEVELOPMENT

A. Background

The Dominican Republic shares the Caribbean island of Hispaniola with Haiti (see figure 1). It has a wide variety of topography, ranging from desert regions on some coastal plains to mountains more than 3,000 meters high. The mountain chains are sources of numerous rivers. Dry areas are found primarily in the southwest corner of the country, while in the northeast, which has heavy rainfall, grasslands and rain forests are prevalent. There are two rainy seasons: from May to August, and from November to January. The country has a land area of 48,380 square kilometers. The population is 7.3 million, growing by 1.7 per cent per year, or slightly faster than the average for Latin American and Caribbean countries (1.4 per cent).

The country had a GNP per capita of 1,050 US dollars in 1992, which made it the seventh poorest in the Latin American/Caribbean region. The income distribution is more skewed than in most other Latin american countries, with the top 20 per cent of the households earning 55 per cent of the income. Health and education indicators are generally below the average for the region. (Table 1 provides an economic and social profile of the Dominican Republic).

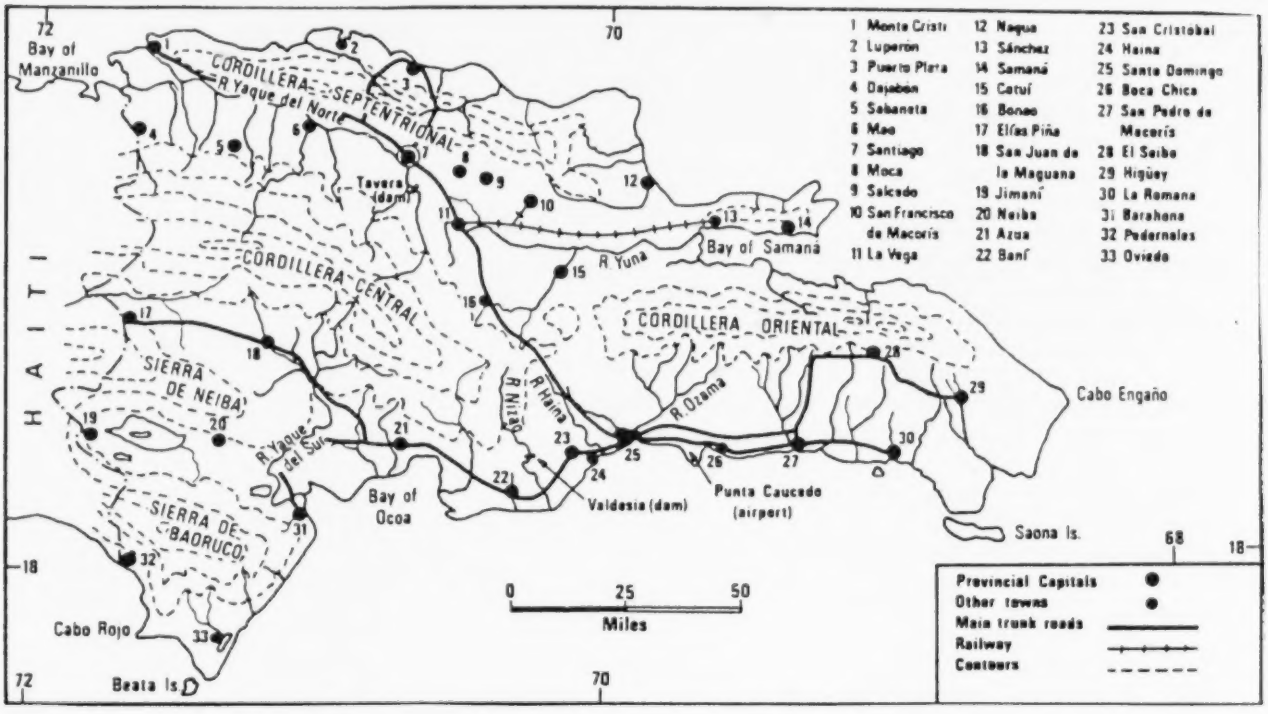
The land is mainly fertile, and 73 per cent of the country's area is agricultural land (30 per cent) or pasture (43 per cent). A high proportion of the population is employed in agriculture and marginal agricultural land has increasingly come to be utilized (see table 2 for the development of land use over the past three decades). Of the agricultural land, about 37 per cent is taken up by four crops: sugar cane (14 per cent), cereals (10 per cent, mainly rice), cocoa (8 per cent) and coffee (5 per cent)[1]. The remainder of the agricultural land is used for the cultivation of fruit and vegetables and for subsistence farming on very small holdings. The distribution of land is very uneven, with a few large holdings and a multitude of very small farms.

Although deforestation in the Dominican Republic has not reached the same proportions as in its neighbour Haiti, conversion of forests to agriculture and pastures has resulted in forests and woodland now covering only 12.5 per cent of the land area. Deforestation has proceeded at an average annual rate of 0.3 per cent over the past three decades. Forestry and fishing are both of very little importance, accounting together for less than 1 per cent of GDP. Almost all of the trees cut are used for fuel, and fisheries produce only about a third of the fish consumed in the country[2].

The country has been almost entirely dependent on imported oil for energy, but recent expansion of hydroelectric power generation capacity has brought the share of hydroelectric power from 15 to 25 per cent of total power generated. Exploration for oil and natural gas, which has intensified over the last decade, has so far not yielded any results that are likely to reduce significantly the country's dependence on imported fuels.

Metal ore mining is limited to one nickel and one gold mine, although the country is considered to have good potential for base and precious metal deposits. Non-metallic minerals are mainly mined for the domestic construction industry.

Figure 1 The Dominican Republic



Source: Ian Bell: The Dominican Republic, Boulder, Colorado, 1981.

Table 1 Economic and social profile of the Dominican Republic

	Dominican Republic		Average, Latin American and Caribbean countries	
Population (1992)	7,321,000			
Population density, pop./km² (1991)	147.7		22.0	
Annual population growth, per cent (trend 1980-1992)	2.1		1.4[a]	
GNP/capita, US$ (1992)	1,050		2,690	
Urban population, per cent (1992)		62.1		58.1
Urban population growth rate, %/year (trend 1980-1992)	3.9		2.4[a]	
Household income share, top 20 % (1990/92)	55.6[b]		50.4	
bottom 40 % (1990/92)	12.1[b]		14.6	
bottom 20 % (1990/92)	4.2[b]		5.4	
Food production/capita (79/81=100) (1992)	79.6		97.3	
Energy consumption/capita, kilograms oil equivalent(1992)	346.9		1,295.3	
Infant mortality, per th. live births (1992)	41.0		32.6	
Life expectancy at birth (1992)	67.5		69.7	
Child malnutrition, per cent of children up to age 5 (1990)	10.4		13.0	
Access to safe water, % of total pop.	67.0		73.5	
% of rural pop.	45.0		56.4	
Population/hospital bed (1990)	529		617	
Gross enrolment ratio primary school, per cent of age group (1991)	95.0[c]		101.5	
Pupils/teacher, primary school (1991)	47.2[b]		25.8	
Adult illiteracy rate, per cent (1990)	16.7		15.4	

Source: World Bank: World Tables.

[a] Increase 1991-1992
[b] 1989
[c] 1988

The bulk of manufacturing takes place in the export processing zones. The first zone was established in 1969 in La Romana, and about 30 more have been added since then, particularly in the 1980s. Manufacturing activities in the zones are oriented mainly towards processing of imported raw materials and semi-processed products for export, particularly textiles and, to some extent, electronic components. The United States and Puerto Rico are the destinations for the vast majority of exports from the export processing zones. Outside the export processing zones, processing of agricultural products accounts for about half of manufacturing activity[3]. Table 3 shows how the sectoral distribution of GDP has evolved since 1970.

Tourism is a major source of foreign exchange earnings, corresponding to about 50 per cent of merchandise imports or about twice as much as merchandise exports excluding exports from the export processing zones. Remittances of Dominicans living abroad, mainly in the United States, correspond to about 15 per cent of merchandise imports (see table 7).

Table 2 Land use in the Dominican Republic, 1961-1992 (per cent)

Year	Agriculture	Pasture	Forest	Other
1961	20.5	43.2	13.9	22.4
1965	21.7	43.2	13.7	21.3
1970	23.5	43.2	13.5	19.8
1975	25.9	43.2	13.3	17.5
1980	29.4	43.2	13.1	14.3
1985	29.6	43.2	12.9	14.3
1990	29.9	43.2	12.7	14.2
1992	30.0	43.2	12.6	14.2

Source: United Nations Food and Agricultural Organization: Agrostat

The country's economy has strong ties to that of the United States. Between half and two thirds of exports go to the United States, and about one third of imports come from this country. United States enterprises also account for most of the foreign investment.

Table 3 Sectoral distribution of GDP, 1970-1992 (per cent at current prices)

	1970	1980	1985	1990	1991	1992
Agriculture[a]	23.2	20.1	19.7	17.5	18.0	17.6
Industry	26.1	28.3	25.8	26.2	25.2	26.1
Mining	1.5	5.3	1.7	1.0	0.9	0.7
Manufacturing	18.5	15.3	13.6	13.5	13.5	14.2
Construction	4.9	7.2	6.0	7.4	6.5	7.5
Services	50.6	51.6	54.5	56.3	56.8	56.2
Total	99.9	100.0	100.0	100.0	100.0	99.9

Sources: Economic Commission for Latin America and the Caribbean: Statistical Yearbook for Latin America and the Caribbean, Santiago, 1991 (figures for 1970 and for 1980 and 1985 for mining); UNCTAD secretariat: estimate based on constant price data in Banco Central de la República Dominicana: Boletín Trimestral, October-December 1993, Santo Domingo, April 1994 (mining in 1990-92); World Bank: Trends in Developing Economies, Washington, D.C., 1993 (all other figures).

[a] Includes animal husbandry, fishing and forestry

Until the 1870s, cattle ranching and subsistence agriculture were the most important economic activities in the Dominican Republic. In that decade, Cuban immigrants introduced modern methods of sugar cultivation and processing. Companies based in the United States rapidly came, however, to dominate the industry. Sugar production increased as more land was taken over for this purpose, sometimes through the eviction of peasants by force, and as economic institutions and policies were geared to favour sugar production[4]. From a level of about 15,000 tons in 1896, sugar exports increased to 50,000 tons in 1905 and to slightly less than 500,000 tons in 1935[5]. Under the dictator Rafael Trujillo, who came to power in 1930, the amount of land under sugar cultivation increased further, doubling from 1948 to 1960, as Trujillo acquired land by methods ranging "from purchase at knockdown price by intimidation or blackmail to outright confiscation"[6]. By the time of his death in 1961, Trujillo controlled two thirds of sugar production in the country. The expansion of sugar production, which took place in spite of falling sugar prices during the period, can be explained by Trujillo's desire to exercise personal power over the economy and to amass personal wealth. While other uses of arable land might have generated larger revenue, this revenue could not have been appropriated as easily by the dictator[7]. As a result, the amount of land available for the rural population diminished and the average farm size declined as the rural population increased.

In the early 1960s, the Dominican Republic's economy depended almost entirely on exports of sugar, supplemented by exports of coffee, cocoa and tobacco, all in unprocessed form. Development of all other sectors, including production of agricultural commodities for domestic consumption, had been held back by the focus on sugar. The small manufacturing sector, mainly consisting of enterprises founded or acquired by Trujillo, suffered from low productivity and lack of investment funds.

B. Economic development since the 1960s

Following the assassination of Trujillo in 1961, the overthrow of president Juan Bosch in a *coup d'état* in 1963, and the civil unrest which ensued and ended with the United States intervention in 1965, Joaquín Balaguer was elected president in 1966. The holdings of Trujillo and his family had been nationalized under Juan Bosch and the *Corporación Azucarera Dominicana*, replaced in 1966 by the *Consejo Estatal del Azúcar* (CEA), was established to administer sugar production. Manufacturing companies owned by Trujillo were turned over to the *Corporación Dominicana de Empresas Estatales* (CORDE). During Balaguer's administration a new development strategy was introduced. The fundamentals of the strategy were set out in a 1968 planning document named *Plataforma para el desarrollo económico y social de la República Dominicana 1968-1985*[8]. The document argued that the "traditional model" was excessively dependent on the "occasional dynamism" of the external sector, in particular on the fluctuating incomes from sugar[9], which accounted for about half of export income at the time. Furthermore, it had failed to generate welfare for large segments of Dominican society. The rapid growth of the population made industrialization necessary in order to alleviate the pressure on agricultural land.

The new strategy was based on the creation of incentives for three categories of industrial activity: (A) enterprises producing exclusively "non-traditional" export goods (all goods except sugar, cocoa, coffee, tobacco and minerals) in export processing zones, (B) enterprises

producing goods which were not before produced in the country, and (C) enterprises producing goods for which installed capacity was not sufficient to meet domestic demand. With regard to the export processing zones, the main objective was to provide employment opportunities for the rapidly growing labour force, although technology transfer and foreign exchange income were also cited as objectives. The support to import substituting industries in categories B and C, while also relying on arguments concerning employment creation, was mainly justified by the same type of arguments as in other Latin American countries during this period: the tendency for terms of trade to deteriorate due to slackening demand for primary commodities from the rest of the world and the variability of income from commodity exports, and the difficulty of developing domestic manufacturing in the face of external competition.

The three categories of firms benefited from fiscal incentives, very high rates of effective tariff protection and preferential access to credit. Firms in export processing zones were exempted from tariffs on imports as well as from taxes on wages and, for foreign-owned companies, on profits (firms based in the Dominican Republic were partly exempted from profit taxes). All infrastructure, including factory space, was constructed by the Government and leased by the enterprises, almost all of which were foreign, mainly from the United States. Firms in categories B and C paid a tariff of 5 per cent on imports of capital goods (increased to 10 per cent in 1972 and to 20 per cent in 1977) and could receive exemptions of up to 95 per cent on intermediate goods and raw materials, in principle depending on their financial performance. These firms were also exempted from taxes on capital income for an amount equivalent to profits reinvested in a new project or an expansion, and had access to credit at subsidized interest rates from the *Fondo de Inversión para el Desarrollo (FIDE)*[10].

In 1967, a dual exchange rate system was introduced, with foreign exchange at the official rate (parity with the United States dollar) being made available almost exclusively for imports of capital equipment and intermediate goods. Companies in export processing zones were exempted from foreign exchange restrictions but had to pay local costs of production in Dominican pesos exchanged at the official rate.

The Dominican Republic achieved one of the highest rates of economic growth in Latin America and the Caribbean during the period from 1968 to 1974. The rate of growth in real GDP was 12 per cent, under conditions of domestic price stability and external equilibrium.

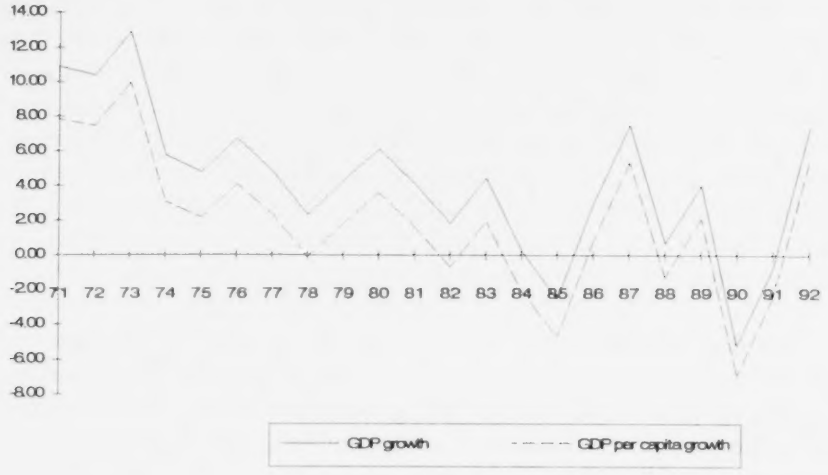
Table 4 GDP and GDP per capita growth rates, 1960-1993
(per cent per year at constant prices)

	1960-70	1970-75	1975-80	1980-90	1991	1992	1993
GDP	4.6	8.9	4.9	1.8	-0.7	7.4	3.0
GDP per capita	1.3	6.1	1.6	-0.4	-2.4	5.6	0.7

Sources: Banco Central de la República Dominicana: Boletín Trimestral, October-December 1993, Santo Domingo, April 1994 (figures for 1993); UNCTAD: Handbook of international trade and development statistics (figures for 1960-1970); World Bank: World Tables (figures for all other years).

While this may appear to demonstrate the success of the new development strategy, and while manufacturing production did indeed increase at a relatively high rate, as protected enterprises producing for the domestic market expanded production, other factors are likely to have been mainly responsible. Restored business confidence after the previous unrest and an ambitious programme of public construction probably contributed somewhat to the high rate of growth[11]. The very positive development of prices for the country's agricultural exports was, however, the main factor behind the positive development of GDP. International sugar prices increased eightfold from 1970 to 1974, coffee prices by 30 to 50 per cent, cocoa prices by 131 per cent, and tobacco prices by 37 per cent[12]. As a result, the unit value of exports increased by 283 per cent from 1970 to 1975 and terms of trade improved by 97 per cent[13].

Figure 2 GDP and GDP per capita growth rates, per cent change on previous year



Source: World Bank: World Tables

The import substitution strategy suffered, however, from similar weaknesses as in several other Latin American countries where it was applied. Access to cheap credit for those companies that were classified in categories B and C, together with access to foreign exchange at the official rate and the application of lower tariffs on imports of capital goods, provided strong incentives for replacing labour with capital. Between 1973 and 1977, average capital invested per employee was almost four times as high in category B and C enterprises as in those belonging to category A, which did not have access to cheap credit or foreign exchange at the official rate[14]. Accordingly, employment was created mainly in the free zones. Given the limited size of the domestic market, which appeared to argue in favour of restricting the number of classified companies, the firms obtaining classification in categories B and C could also establish dominant market positions and collect extensive rents[15].

The provision of cheap credit to classified enterprises also had the effect of raising real interest rates for other borrowers, most importantly agriculture. Furthermore, the anti-agricultural bias of the import substitution strategy, particularly the introduction of the dual

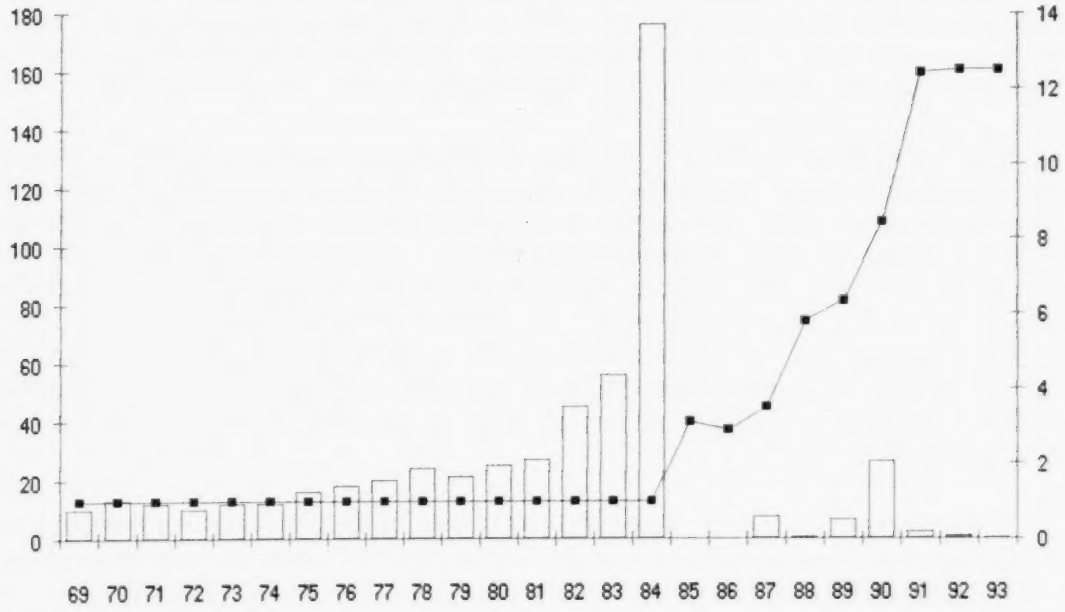
exchange rate system and the growing overvaluation of the official exchange rate, was reinforced by domestic price controls on food products and the establishment of a food importing programme, both administered by the *Instituto de Estabilización de Precios (INESPRE)*. The result was depressed prices for agricultural products, with the internal terms of trade, agriculture vs. industry, falling by 31 per cent from 1969 to 1979[16], and a very slow growth in food production. A land reform based on distribution of government owned land (including land expropriated from the Trujillo family) had been initiated in 1962, but proceeded very slowly.

Before the negative effects of the import substitution strategy had time to manifest themselves clearly, however, the increase in international oil prices, combined with falls in the prices of agricultural exports, put an end to the period of rapid expansion. The Dominican Republic is entirely dependent on imports of oil and the oil price shocks of 1973/74 and 1979 had a major impact on its trade balance. The share of fuel in total imports increased from less than 7 per cent in 1970 to 22.6 per cent in 1975 and 25.4 per cent in 1980. Meanwhile, prices of sugar fell dramatically, by 62 per cent from 1974 to 1978. Price increases for cocoa and coffee and a short-lived price surge for sugar in 1980 were not sufficient to prevent a deterioration in the terms of trade by 63 per cent from 1975 to 1978, and by a further 8 per cent from 1978 to 1980[17].

As the terms of trade deteriorated, the weaknesses of the development strategy became more apparent. In addition to declining or stagnant prices for their products, traditional exporters were hurt by a widening difference between the official and the parallel exchange rates, since payments for exports had to be exchanged at the official rate, while imports had to be paid for in currency purchased in the parallel market (the evolution of exchange rates is shown in figure 3). The protected companies, which were producing consumer goods for the domestic market, had reaped the initial benefits of the import substitution and were unable to continue expanding or diversifying production, in particular since the Government, attempting to reduce pressure on the current account, reduced the number of products that could be imported using foreign exchange purchased at the official rate and reduced exemptions from import tariffs. Thus, these companies gradually lost the advantage of cheap imported inputs.

In 1972, new agrarian reform laws were passed, and the focus shifted to supporting the establishment of rice growing collective farms. While rice production increased, problems similar to those seen in collective farms in other countries (the lack of a relationship between work done by members and payment received, excessive control by the Government agency responsible for agrarian reform and the inability of the collective farm to absorb family labour) led to low productivity in spite of the collective farms receiving the bulk of Government resources in terms of credit and technical assistance. In 1985, the Government agreed to the farmers forming looser associations which retained the advantages of the collective farms (better terms for credit and purchased inputs as a result of bargaining as a collective, shared equipment etc.) but which did not have the drawbacks of the latter[18]. Apart from the experiment with rice collectives, little in the way of improvement in the conditions of agriculture took place, and food production continued to grow only slowly.

Figure 3 Official and parallel rates of exchange (left scale: parallel market exchange premium, per cent; right scale: official exchange rate, pesos/US$)



Source: Banco Central de la República Dominicana

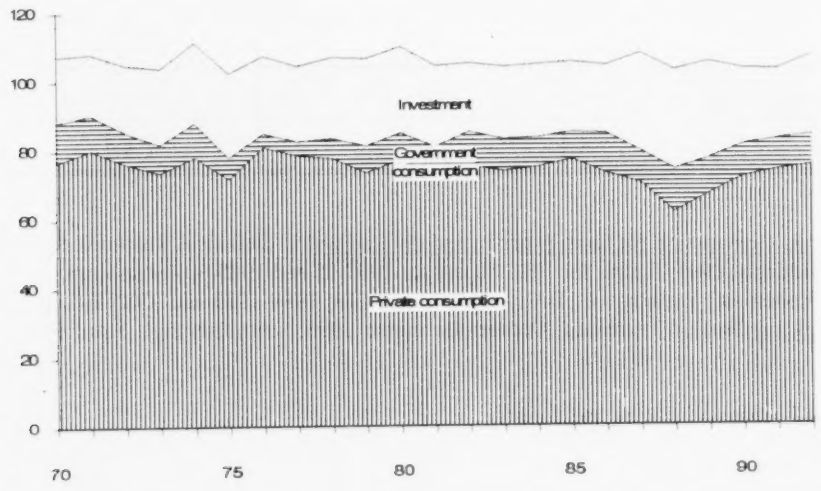
The trade balance, which had been positive or in a small deficit, became increasingly negative after 1977, and had a deficit corresponding to 11 per cent of GDP in 1980. It should be noted that imports and exports of free zone enterprises are not included in the trade balance. The deficit on the current account, which had been relatively small, started growing and also reached the level of 11 per cent of GDP in 1980. The current account includes local expenditure by free zone enterprises. Annual growth in GDP fell to 4.9 per cent in the period 1975 to 1980[19].

During the 1980s, terms of trade continued their downward trend as prices for the traditional agricultural exports stagnated or declined further and the share of fuel in total imports continued increasing to a peak of 40.5 per cent in 1984, leading to continuing deficits in the trade balance. Growth in most sectors had stagnated (see table 5), but the Government was unwilling to reduce consumption levels (see figure 4). In addition, the external debt had increased rapidly since the mid-1970s, and since 1977, short-term debt accounted for a significant portion of total debt (see figure 5). Accordingly, as international interest rates rose, debt service absorbed a growing portion of foreign exchange income.

In January 1985, parity with the United States dollar had to be abandoned and the official exchange rate, which had come under increasing pressure as the premium paid for dollars at the parallel exchange market premium increased, was subjected to repeated devaluations in the following years (see figure 3). The devaluations failed, however, to provide more than a very limited stimulus to exports. Apart from exports from free zones, only exports of some agricultural products increased significantly. Exports of fruits, including bananas, pineapples and

oranges, have increased since the mid-1980s, but these products still account for only between 5 and 10 per cent of agricultural exports, and, with the exception of pineapples, exports are still marginal at 5 to 10 per cent of total production. Similarly, meat exports, in particular exports of bovine meat, began to increase at the same time, but account for about the same low proportion of agricultural exports. Again, the quantity exported is a small proportion of total production[20]. Fiscal incentives for companies processing agricultural products were introduced in 1982, but appear to have had limited effect[21]. Sugar production and exports have declined since the mid-1980s, in spite of a continued increase in the land area used for sugar cultivation[22]

Figure 4 Domestic absorption, per cent of GDP



Source: World Bank: World Tables

The continued trade balance deficit and increasing indebtedness might have been expected to lead to a financial crisis and reversal of the policies relatively rapidly. However, the Government was able to continue its policies throughout the 1980s as a result of four developments which relieved the pressure on the current account and provided the Government with income that enabled it to pursue expansionary policies. The most important development in terms of the current account was the increase in income from international tourism, which expanded rapidly during both the 1970s and the 1980s as a result of fiscal incentives[23]. The second was the increased income from mining, coming from two major mineral projects: the Falcondo nickel project and the Rosario gold mine. This income was of major importance to the current account and even more to the Government budget (see chapter III). The third development was the increase, in particular after 1975, in remittances from Dominicans working abroad. These remittances reached a level corresponding to a third of merchandise exports in 1985[24] (see table 7). Finally, local expenditure by enterprises in the export processing zones increased as a result of the rapidly increasing production and employment[25] in the zones (see tables 6 and 7). While local expenditure by these companies had to be paid for in local currency obtained at the official exchange rate, this was not a major disadvantage for them, at least not

in the 1970s and early 1980s. Foreign exchange income from this source and from tourism grew at an average annual rate of 22 per cent from 1970 to 1980 and by 15 per cent from 1980 to 1990. By 1982, they corresponded to almost half of income from merchandise exports and in 1987 they were equal to them.

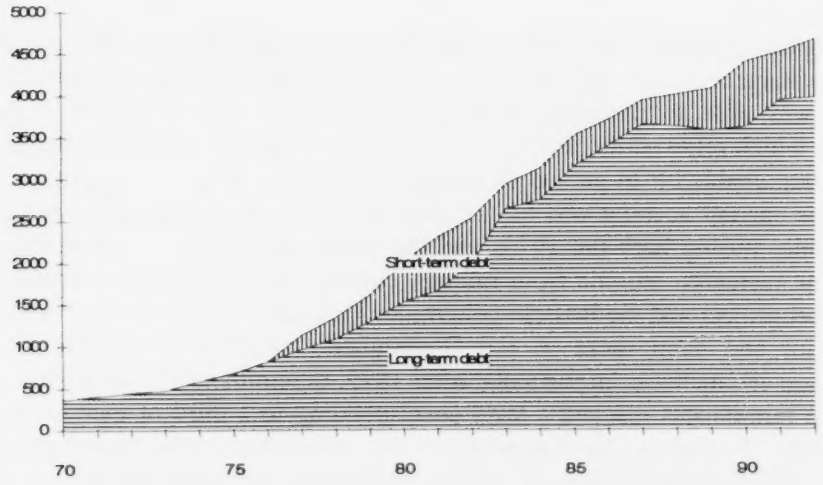
Table 5 Growth in sectoral value added, 1970-1993
(per cent per year at constant 1970 prices)

	1970-80	1980-85	1985-90	1991	1992	1993
Agriculture[a]	3.4	2.1	-0.2	4.2	6.0	0.3
Industry	8.8	0.6	3.2	-2.6	11.1	1.0
Mining	18.6	1.6	-1.6	-4.4	-18.5	-37.1
Manufacturing	6.8	-0.2	1.8	1.9	11.2	1.7
Services	7.3	1.8	2.9	1.5	6.8	4.6

Sources: Economic Commission for Latin America and the Caribbean: Statistical Yearbook for Latin America and the Caribbean, Santiago, 1991 (figures for 1970-80 and for 1980-85 and 1985-90 for mining); World Bank: Trends in Developing Economies, Washington, D.C., 1993 (figures for 1980-1985 and 1985-90); Banco Central de la República Dominicana: Boletín Trimestral, October-December 1993, Santo Domingo, April 1994 (figures for 1991 to 1993)

[a] Includes animal husbandry, fishing and forestry

Figure 5 External debt, million US dollars



Source: World Bank: World Tables

Table 6 Dominican Republic exports, 1975-1993[a] (per cent of total)

Commodities	1975	1980	1985	1990	1991	1992	1993
Traditional exports	*74.6*	*43.4*	*40.0*	*17.9*	*15.4*	*12.0*	*12.3*
Sugar and derivatives	64.5	30.6	22.0	11.3	10.1	8.2	8.6
Green coffee	3.7	4.8	9.9	3.0	2.6	1.4	1.4
Cocoa beans	2.7	4.8	6.1	2.6	1.9	1.8	1.6
Unmanuf. tobacco	3.7	3.2	1.9	1.0	0.8	0.6	0.7
Non-traditional exports	*25.4*	*56.6*	*60.0*	*82.1*	*84.6*	*88.0*	*87.7*
Minerals	16.0	35.2	25.7	19.5	15.7	11.7	7.5
Bauxite	1.8	1.7	0.0	0.0	0.0	-	-
Ferronickel	11.1	9.4	12.7	15.9	13.3	10.2	7.3
Precious metals	3.1	24.1	13.0	3.6	2.4	1.5	0.2
Other non-traditional exports	9.4	21.4	34.3	62.6	68.9	76.3	80.2
From free zones	3.0	10.9	21.6	53.2	60.3	67.9	71.2
National exports	6.4	10.5	12.7	10.4	8.6	8.4	9.0
Total (million US dollars)	920.5	1078.4	949.7	1569.0	1656.4	1753.0	1839.2

Sources: UNCTAD: Commodity Yearbook (figures for bauxite and nickel 1975, 1980 and 1985); Centro Dominicano de Promoción de Exportaciones (all other figures 1975, 1980 and 1985); Banco Central de la República Dominicana: Boletín Trimestral, October-December 1993, Santo Domingo, April 1994 (figures for 1990-93).

[a] Including exports from free zones.

It proved impossible, however, to postpone the crisis indefinitely. The exchange rate depreciation had raised the domestic currency cost of servicing the external debt, resulting in increasing fiscal deficits. Private domestic investment was crowded out as real interest rates rose. Efforts to stimulate the economy through public investment, particularly in 1987, resulted in dramatically increased inflation from 1988, and the deficit on the current account rose, while international reserves decreased. In 1990, output fell by 5 per cent, inflation was 101 per cent, and arrears to external creditors approached 20 per cent of GDP. In response to the economic

Table 7 Balance of payments, 1980-1992
(million US dollars)

Transactions	1980	1985	1990	1991	1992
1. Merchandise exports[a]	961.9	738.5	734.5	658.3	562.4
2. Merchandise imports[a]	-1519.7	-1285.9	-1792.8	-1728.8	-2174.6
of which, oil and derived products	386.0	452.6	516.5	436.8	487.8
A. Trade balance (1+2)	-557.8	-547.4	-1058.3	-1070.5	-1612.2
3. Exports of services	309.4	584.3	1282.4	1338.5	1603.7
of which *a) Tourism*	..	..	899.5	877.2	1095.8
b) Free zone local expenditure	..	..	196.1	249.9	287.4
4. Imports of services	-399.0	-274.5	-603.4	-712.5	-816.2
B. Service balance (3+4)	-89.6	309.8	679.0	626.0	787.5
C. Net transfers	-72.5	130.0	370.6	386.5	431.8
of which private	199.8	242.0	314.8	329.5	346.6
D. Current account balance (A+B+C)	-719.9	-107.6	-8.7	-58.0	-392.7
5. Long-term capital	..	..	186.9	141.7	127.5
of which foreign investment	92.7	36.2	132.8	145.0	179
6. Short-term capital	..	..	-102.4	296.6	388.9
E. Capital balance (5+6)	548.4	75.5	84.5	438.3	516.4
F. Balance of payments (D+E)	-123.5	123.6	75.8	380.3	123.5

Sources: International Monetary Fund: International Financial Statistics (figures for 1980 and 1985); Banco Central de la República Dominicana: Boletín Trimestral, October-December 1993, Santo Domingo April 1994 (figures for 1990-92); UNCTAD: Handbook of international trade and development statistics (oil imports in 1980 and 1985).

[a] Not including free zones exports and imports.

crisis the Government introduced a stabilization programme that stopped inflation and initiated economic recovery. The main components of the programme, which began in 1990 and continues at present, have included:

- Reduction of the fiscal deficit by raising the prices of goods and services produced by the public sector, including state owned enterprises, increasing import tax revenues and reducing public expenditures;

- Tightened monetary policy, unification of the exchange rate and deregulatory reforms of the financial sector;

- Reforms of the tax system, aiming at broadening the tax base;

- Trade policy reforms, including, most importantly, streamlining and lowering of tariffs.

The results of the stabilization programme have so far been mainly positive. Growth in real GDP reached 7.4 per cent in 1992 and 3 per cent in 1993; inflation was brought down to under 3 per cent in 1993, although it appears to have accelerated slightly again in 1994; unemployment has decreased from 22-23 per cent to about 18 per cent[26]; the exchange rate has stabilized after large devaluations in 1990 and 1991; the public sector showed a surplus of 1.4 per cent of GDP in 1992; and all arrears to external creditors were cleared early in 1991[27].

C. The present economic situation and problems

While the stabilization programme has been mainly successful, problems remain, both in terms of macroeconomic stability and long-term growth prospects. Despite continuing growth in tourist income, local expenditure on the part of free zone companies, and private transfers from Dominicans working abroad, the current account deficit is still growing, due to a high and growing deficit in the trade balance. Exports (except from free zones) have decreased each year since the late 1980s and were 43 per cent lower in 1993 than in 1989. While this decline can be attributed entirely to decreased exports of traditional agricultural export products and minerals, manufacturing production and exports outside the free zones have remained stagnant[28]. Thus the foreign exchange constraint may become important in the future, even if the present positive net flow of capital, due partly to high real interest rates, into the country can be maintained.

While the free zones have been of major importance in providing employment, other linkages to the national economy are tenuous, consisting mainly of the processing of some domestically produced agricultural commodities, and they have had little impact in terms of technology transfer or stimulus to national manufacturing.

The taxation reform, the most important component of which was an increase in the rate of the value added tax and a broadening of its application to include certain services, has succeeded in reducing the Government's reliance on income from import taxes and tariffs. However, the latter sources still account for 34 per cent of Government tax income, and further trade reforms could be jeopardized by the Government's need to maintain income. The taxation reform has not been fully implemented, since detailed regulations had not yet been issued in the summer of 1994. A new law on foreign investment, which would appear to be a high priority, given the need to expand production capacity, has been delayed for several years. The new law would provide for total repatriation of capital, capital gains and net profits and would simplify registration procedures.

Other problems, which have been present for a long time in the Dominican economy, also persist. Agricultural production is stagnant, due to the sub-economic size of many holdings. The insufficiency of extension and rural credit schemes has served to prolong the situation, although the substantial increase in the budget of the Ministry of Agriculture in 1993 (about 125

per cent[29]) may signal a change in this regard. Inequalities in income have increased and a large proportion of the population lives below the poverty line. Infant mortality is among the highest in Latin America and, in contrast to the data shown in table 1, recent sample surveys suggest that between a third and half of children under six years of age suffer from moderate or severe malnutrition. Although enrolment rates in primary schools are high, so are late entry, repetition and dropout rates[30]. Again, substantial increases in the budgets of the Ministry for Education and the Ministry for Public Health in 1993 may eventually bring improvements.

Notes

1. Data on land use are from United Nations Food and Agricultural Organization: Agrostat.

2. United Nations Food and Agricultural Organization: op. cit.

3. Oficina Nacional de Estadística

4. These policies included a Land Registration Law, which was introduced in 1920, when the Dominican Republic was occupied by the United States, and which led to a very large increase in the land controlled by sugar companies. The sugar companies were also exempt from duties on imported machinery and from taxes on profits, and land needed for the construction of infrastructure necessary for sugar exports was expropriated by the Government for the use of the companies. For a detailed discussion of the factors governing economic development in the Dominican Republic and how they were related to the dominance of sugar production, see Claudio Vedovato: Politics, Foreign Trade & Economic Development: A Study of the Dominican Republic, London 1986.

5. Vedovato, op. cit., p. 60-61.

6. Quotation from Ian Bell: The Dominican Republic, Boulder, Colorado, 1981, p. 281.

7. From the descriptions in Vedovato (op. cit., p. 64-68), and Bell (op. cit., p. 306-307), it is clear that Trujillo's sugar enterprises benefited from very low prices of factors of production (land was obtained at little or no cost, convict labour and Haitian immigrants employed under harsh conditions with very few rights and working for wages unacceptable to Dominicans were used at plantations, while army manpower and equipment were used for construction), and from other favourable conditions (Trujillo as head of state did not pay taxes), but in spite of this, the enterprises were not profitable.

8. Oficina Nacional de la Planificación, 1968, quoted in Vedovato (op. cit., p.115).

9. The fluctuations in sugar export incomes were a function not only of variations in world market prices, but also of the size of the United States import quotas for sugar from the Dominican Republic. From 1973, export quotas under the International Sugar Agreement added to the variations and unpredictability of export volumes.

10. In 1985, the lending of FIDE funds to companies in the free zones was authorized, provided the companies were 90 per cent Dominican-owned.

11. According to Vedovato (op. cit. p. 129), construction increased at an annual rate of 16.4 per cent from 1968 to 1974.

12. Figures from UNCTAD: Monthly commodity price bulletin.

13. Figures from UNCTAD: Handbook of international trade and development statistics, 1988. The increase in export income from sugar, tropical beverages and tobacco from 1970 to 1975 corresponded to about 35 per cent of GDP in 1970, which, since export volumes were constant or declining, means that more than half of the

registered growth in GDP during this period can be *directly* attributed to the rise in international prices for these commodities (based on figures in UNCTAD: Yearbook of international commodity statistics, 1985).

14. Vedovato, op. cit., p. 121.

15. Vedovato (op. cit., p.123) reports that under-utilization of capacity was widespread during the period. This is likely to have been seen by the authorities as an argument in favour of limiting the number of classified firms in any sector.

16. World Bank: Economic Memorandum on the Dominican Republic, Washington, D.C., 1981, quoted in Vedovato, op. cit., p. 129.

17. Data on terms of trade and the composition of imports are from UNCTAD: Handbook of international trade and development statistics, and data on commodity prices are from UNCTAD: Monthly commodity price bulletin.

18. For a discussion of the problems of the rice growing collective farms and the reasons behind the change to looser associations, see Carrie A. Meyer: Agrarian Reform in the Dominican Republic: An Associative Solution to the Collective/Individual Dilemma (World Development, Vol. 17, No. 8, pp. 1255-1967, Great Britain, 1989).

19. World Bank: World Tables.

20. United Nations Food and Agricultural Organization: op. cit.

21. The incentives, which were differentiated according to the domestic content of the products and the location of the operation, included exonerations from income tax and import duties at rates varying from 40 to 100 per cent for new projects.

22. Sugar production per hectare peaked in 1964 at 78.6 tons when sugar was cultivated on 99,000 hectares, and has been on a declining trend ever since, reaching only 32.1 tons in 1993, when the area cultivated was 215,000 hectares (United Nations Food and Agricultural Organization: op. cit.).

23. The incentives included complete exemption from corporate or personal income tax on income earned from tourism and exemption from import duties and taxes on goods and material necessary to build, equip and furnish a tourist facility (provided the goods were not available from domestic producers on competitive conditions).

24. World Bank: World Tables.

25. Employment in the zones increased from 16,400 in 1980 to 120,000 in 1991.

26. Information from Banco Central de la República Dominicana.

27. World Bank: Trends in Developing Economies, Washington, D.C. 1993.

28. It is not clear to what extent the expansion of manufacturing in the free zones has taken place at the expense of industrial export oriented activities outside these zones, although it appears reasonable to assume that the opportunities offered by the free zones have attracted investment capital which might otherwise have been invested in manufacturing in other parts of the country.

29. Banco Central de la República Dominicana: Boletín Trimestral, October-December 1993, Santo Domingo, April 1994.

30. World Bank: Trends in Developing Economies, Washington, D.C. 1993.

III. OVERVIEW OF THE MINERAL SECTOR

A. Companies and operations

Since bauxite production in the Dominican Republic ceased in 1991 the metallic mineral sector in the country consists of two companies: Falconbridge Dominicana (Falcondo), which mines nickel ore and produces ferronickel, and Rosario, which mines gold and silver. Some non-metallic minerals, including salt, gypsum, limestone and building materials such as gravel, are also produced. In the following, the various operations are briefly described.

1. Bauxite

Bauxite production in the Dominican Republic was begun in 1959 by the Aluminum Company of America (Alcoa). The operations were located in the Cabo Rojo-Pedernales area, in the southwestern part of the country near the Haitian border. In addition to bauxite, limestone was mined on the same concession. Production costs were low since there was no overburden and the deposits were of relatively good quality. The bauxite was shipped to Alcoa's alumina refineries in the United States. At its peak, in 1974, production reached almost 1.4 million tons, accounting for export income of almost 18 million US dollars. In 1982, bauxite mining ceased, and the following year Alcoa gave up its concession, mainly because the Dominican Government, like the governments of other bauxite producing countries in the region, had introduced an export levy on bauxite. The size of the levy, 17 US dollars per ton compared with an export unit value of around 35 dollars per ton, made continued operations unprofitable to Alcoa[1].

In 1985, the limestone concession was acquired by Ideal Basic Industries, a cement company based in the United States which had just completed a new cement plant in Mobile, Alabama, and which was interested in securing a supply of limestone. In 1989, the company agreed to mine the bauxite on behalf of the Government and was paid a fixed price for the material. This price did not at all times cover the costs of the bauxite operation, but the company accepted the conditions since it was mainly interested in the limestone deposits. The Government sold the bauxite, mainly to Alcoa, and was usually able to get a price considerably higher than that paid to Ideal. Production during the time that Ideal managed the operations was generally around 200,000 tons per year or less.

In February 1991 bauxite production ceased, since the new deposits that Ideal wanted to develop, and which would have enabled the operation to survive for a considerable number of years, had become part of a national park. Limestone production continued until 1993, although not in the national park.

2. Nickel

Nickel ore is mined and converted to ferronickel at Bonao by Falconbridge Dominicana (Falcondo), which is the world's second largest producer of ferronickel after Société Le Nickel's operation in New Caledonia. The company is an almost wholly owned (85.3 per cent) subsidiary

of the Canadian company Falconbridge Ltd. Other shareholders include the Dominican Government (10 per cent), the Canadian mining company Redstone Resources (4.1 per cent), and various individuals (0.6 per cent). Falconbridge Ltd. is in turn owned by Noranda (46.4 per cent), a Canadian copper and zinc producer, Trelleborg, a Swedish metals and rubber company (28.3 per cent), and other investors (25.3 per cent). Production began in 1971 and has generally been between 20,000 and 30,000 tons (nickel contained in ferronickel) per year depending on the state of the international nickel market. Installed production capacity is 31,750 tons of nickel contained in ferronickel per year. As of 1994, the entire production is exported, mainly to North America, Western Europe and Asia.

The ore is lateritic, created through weathering of ultrabasic rocks, found only on hilltops where the surrounding rock has eroded away. The entire ultrabasic belt in which the deposits occur is about 90 kilometers long and 5 kilometers wide. Mining is done simultaneously in open pits at six orebodies. At the international nickel prices prevailing in 1994, the operation was profitable. A contributing factor was the low oil prices. Even so, energy accounted for half of operating costs. The operation has its own oil refinery and power generating plant, with about 22 per cent of electricity production sold to the Dominican Power Corporation. Detailed exploration goes on continuously in order to maintain ore reserves at a level that allows mine development to be planned over a ten-year time horizon. The company re-initiated a long-term exploration programme for base metals in 1994.

According to an agreement with the Government in 1969, Government income from Falcondo was to be based on income taxes and dividends and not on royalties. From the start of production until 1987, however, a number of unforeseen developments affected the profitability of the project negatively. The rise in oil prices led to major cost increases while excess supply of nickel on the world market resulted in depressed nickel prices. In order to cover losses and keep the company operating, the major shareholders, Falconbridge and Armco Steel (which subsequently sold its share to Falconbridge), who had guaranteed Falcondo's loans, made large loans to Falcondo. Since the prevailing rates of interest were high, Falcondo showed no or very low profits, and the Government did not receive the income from the project that it had counted on. In November 1987, the Government issued a decree levying a special contribution tax on all exports. The amount of the tax was about 25 per cent, with the exact levy varying depending on the development of the peso's rate of exchange against the US dollar. Falconbridge contended that it should not pay the tax since the 1969 agreement excluded Falcondo from all taxes except income taxes. The Government insisted that the tax should be paid. After protracted negotiations, during which shipments of nickel were at times blocked by the Customs Department and Falcondo suspended its production activities, an agreement was eventually worked out in May 1988. Since the Government was unwilling to accept that Falcondo be taxed only on accounting profits, the basis for the imposition of taxes was to be the difference between "deemed" revenues and costs. Deemed revenues were based on quantity exported valued at the average three-month price of nickel on the London Metal Exchange. Deemed costs included a base cost of US dollars 1.63 per pound adjusted for changes in crude oil prices and inflation. A floor tax rate of US dollars 0.17 per pound was set[2]. Subsequently, the Government agreed in a letter of intent in late 1992 to accept accounting costs and revenues as the basis for calculation of taxes and to tax the company at a rate of approximately 50 per cent of its financial statement earnings. The agreement was formally signed in September 1994[3].

3. Gold

The gold deposit at Pueblo Viejo had probably already been exploited for some time when the Spaniards started working it in 1505. Following discovery of richer deposits in continental South America, the deposit at Pueblo Viejo was abandoned in 1525[4] and was only reopened in 1971, when Rosario Dominicana S.A. started gold mining operations. The company was owned by two United States companies (Rosario Resources Corporation and Simplot Industries Inc.), each holding 27 per cent of the shares, and by the Government through the Central Bank (the remaining 46 per cent). In 1979, the Government bought the 54 per cent foreign interest for US $ 70 million. Rosario Resources continued to operate the mine under a management contract for some years after this. The Central Bank now owns 98 per cent of the shares, with the remaining 2 per cent owned by decentralized state institutions.

The deposit consists of three types of ore: oxidized ore on top, a transition zone with some oxidized and some sulphide ore below this, and sulphide ore further down. Originally, the deposit contained about 50 million tons of oxide ore with on average 4 grams/ton of gold. This ore, which was exclusively mined in the beginning, is relatively soft and can be easily milled without major losses of gold and silver. The ore in the transition zone and the sulphide ore are considerably harder. In mid-1992, about 11 million tons of ore remained in the oxide and transition zones. Total sulphide ore reserves are estimated to be at least 100 million tons with the same grade as the oxide ore.

Production was about 10 tons of gold and 50 tons of silver per year until the mid-1980s, when it started declining. In 1992, only 2.6 tons of gold and 13 tons of silver were produced. The ore is converted to doré, an alloy of gold and silver, which is shipped to the United States for further smelting and refining.

There were several reasons for the decline in production. Most importantly, when mining reached the transition zone, the rate of recovery of gold and silver fell since this ore could not be ground finely enough with the methods and equipment used for the same amount of precious metal content to be extracted. Furthermore, the sulphur content of the sulphide ore posed problems with regard to sulphur disposal. It was initially proposed to roast the sulphide ore and produce sulphuric acid from the sulphur. This would however entail very high capital costs and there was a great degree of concern among the general public about the risks to the environment of shipping sulphuric acid, either by train or by pipeline, to the coast for export. A second alternative that was studied was to convert the sulphur to gypsum, using locally available limestone. The gypsum, being more or less chemically inert, would present a smaller environmental problem, and could possibly have found a market, either within the country or in the region. The costs of this solution were however prohibitive. Eventually, another process was chosen. In this process, the ore will be finely ground and a sulphide concentrate, containing most of the sulphide material in the ore, will be produced by flotation. Gold and silver will be extracted from the sulphide concentrate through cyanidation and a carbon-in-leach process. From the remaining concentrate, a zinc sulphide concentrate, containing all of the sulphur, can be produced and sold for export. Since waste rock and tailings will still contain some sulphide material, the process will necessitate investments to ensure that this material does not escape to the surrounding environment.

The process of arriving at a decision took a long time, however, from 1987 to 1993. The

fact that the company management had to refer all decisions to the Central Bank and the highest levels of Government is likely to have caused considerable delay in the decision making process. Meanwhile, production and income fell, since only selected, softer parts of the orebody could be mined, and since the recovery of gold and silver was low. Furthermore, the operation, which had been self financing with regard to replacement of equipment, could no longer generate the surplus needed to maintain and replace machinery. Since the company had not been allowed to retain sufficient earnings to ensure capital replacement and necessary repairs, any investment funds had to come from the Government, which did not provide enough funds to maintain the equipment. Accordingly, availability of equipment fell to very low levels. This contributed to the fall in production. The company's financial situation also became increasingly precarious and it was becoming unable to service its debt.

A decision to restructure the company entirely was taken in 1992. At this time, the number of employees was reduced from 1,400 to 1,050. The mine was then closed from March 1993 to April 1994. At the time of closure, the company was formally liquidated and all employees fired. Some have since been rehired to manage the technical and financial restructuring process. The objectives of the restructuring include implementation of new production methods involving the renovation of two grinding circuits and addition of a new one which will produce a finer material, and the addition of a flotation plant. A new tailings dam will be built and an older one renovated. The company will also be financially reconstructed. Loans have been obtained from the European Union under its SYSMIN scheme for the initial stages of the reconstruction. During the transition period to new technology, production will be relatively low. In mid-1994, gold production was 550 ounces/day, corresponding to about 6 tons/year. Addition of the new grinding circuit will result in an increase of production to 900 ounces/day, or 10 tons/year. The new sulphide ore treatment facilities are expected to be in production in 1996[5].

Rosario operates under a mining concession under the Mineral Law. It has paid taxes on its income to the national and provincial governments, export taxes and a "contribution" to the Central Bank (see table 10). As far as is known, there has been no discussion in the country of the possible desirability of setting aside this income in a special fund, either for general development purposes or with a view to offset variations in export income from gold, as has been done in other countries.

4. Non-metallic minerals

There are about 20 different companies operating in the non-metallic minerals sector, producing almost entirely for the domestic market. Limestone has been produced by Ideal, which also produces agglomerate for construction, and by Rosario and a couple of other companies. In 1994, however, no limestone was produced. Gypsum, marble and salt are also produced, mainly by the state owned conglomerate CORDE (Corporación Dominicana de Empresas Estatales). CORDE is also receiving assistance from the European Union under the SYSMIN programme to evaluate deposits and rehabilitate operations for the production of gypsum, salt and ornamental stone. Production of ceramic clays for domestic use has increased. Finally, the Dominican Republic is one of the few countries where amber is found. The amber, the collection of which is an artisanal activity, is mainly used for local production of jewelry, part of which is exported.

5. Exploration by foreign investors

The improving economic situation, together with recent and expected changes in legislation, has had the effect of stimulating interest in the Dominican Republic on the part of foreign investors. Several international mining companies, including Cominco, Canyon Resources, Battle Mountain, Mitsubishi and BHP Minerals, have initiated exploration programmes for gold and base metals in the country, and in some cases, promising deposits have been identified.

B. Economic importance of the mineral sector

The development of mineral production and exports is shown in tables 8 and 9. Since production and export quantities are identical for the minerals shown, except for variations due to stock changes, export values rather than quantities are shown in table 9.

Table 8 illustrates the decline and cessation of bauxite production as well as the decline in gold production due to the depletion of oxide ore reserves.

Table 8 Production of main minerals, 1975-1993

	1975	1980	1985	1988	1990	1991	1992	1993
Bauxite[a]	886.6	587.6	0	168	85	7	0	0
Nickel[b]	26.9	16.4	30.1	29.3	28.7	29.1	27.5	23.9
Gold[c]	5.7	11.5	10.2	6.4	4.3	3.1	2.6	0.4
Silver[d]	3.0	51.1	50.1	42.6	21.6	21.7	13.0	1.7

Sources: UNCTAD: Commodity Yearbook (bauxite); Falconbridge Dominicana (nickel); Rosario Dominicana (gold and silver); Banco Central de la República Dominicana: Boletín trimestral, October-December 1993, Santo Domingo, April 1994 (figures for gold and silver in 1993).

[a] Thousand tons gross weight
[b] Thousand tons nickel content in ferronickel
[c] Tons gold content in doré
[d] Tons silver content in doré

As seen from table 9, mineral sales have made a significant contribution to export income. Mineral exports accounted for between 20 and 40 per cent of total export revenue (including exports from the free zones) in the latter half of the 1970s and in the 1980s. As noted in chapter II, while the increase in mineral export proceeds compensated to some extent for the fall in export revenue from agricultural commodities, it was however not sufficient to prevent a deterioration of the trade balance.

While the mineral sector's share in GDP (generally around 4 per cent) or employment (about 1 per cent) is not especially important, its contribution to Government income has at

times been highly significant. Table 10 shows some estimates of Government income from the mineral sector. Since this information is not included in any official statistics, the data have been obtained from a variety of sources and some are estimates. They include only Government income items that are relatively easy to estimate such as taxes on corporate income. They include neither indirect taxes or import tariffs paid by mineral sector companies nor income taxes paid by their employees. Accordingly, the data are likely to underestimate total Government income from the sector considerably.

Table 9 Value of exports of main minerals, 1975-1993 (million US dollars)

	1975	1980	1985	1988	1990	1991	1992	1993
Bauxite	16.7	18.5	0.0	1.7	0.5	0.2	0.0	0.0
Nickel	102.2	101.3	120.7	461.5	300.0	275.0	211.0	133.8
Gold	28.1	227.1	104.4	89.0	52.7	35.8	24.1	3.9
Silver	0.4	32.2	19.4	8.8	3.3	2.8	0.9	0.2
Total	147.4	379.1	244.5	561.0	356.5	313.8	236.0	137.9
Share of total exports, per cent[a]	16.0	35.2	25.7	40.0	19.5	15.7	11.7	7.5

Sources: UNCTAD: Commodity Yearbook (bauxite and nickel); Rosario Dominicana (gold and silver); Banco Central de la República Dominicana: Boletín trimestral, October-December 1993, Santo Domingo, April 1994 (figures for 1993).

[a] Including exports from export processing zones.

Mineral sector income has been highly variable but it has also been of major importance to the Government, in particular during the period of mounting fiscal deficits in the late 1980s. This income helped to delay the economic crisis that finally occurred in 1990. Unlike the situation in some other countries, such as Chile, with important and highly variable income from the mineral sector, there has never been any attempt in the Dominican Republic to manage the income from mineral exports separately in order either to smooth out fluctuations in the availability of foreign exchange or ensure that the depleting natural resource is replaced by other forms of capital.

While the importance of the fiscal linkage is evident, the mineral sector's production/consumption linkages to other sectors are relatively unimportant in the Dominican Republic. With the exception of basic building materials for domestic use, the sector's output is exported in relatively unprocessed form (although the nickel ore mined by Falcondo is converted to ferronickel). It is highly dependent on imports of equipment, machinery and process inputs. While the large mining operations thus function more or less as "enclaves" in the economy, they are of course important to the local economy of the regions surrounding the

mines, since they provide local employment (Falcondo and Rosario have together employed slightly less than 2,000 people in recent years, and since their mines are located in the same area they have together accounted for a significant portion of local formal employment), infrastructure and services such as schools and medical care.

Table 10 Estimated Government income derived directly from the mineral sector, 1975-1992 (million US dollars)

	1975	1980	1985	1988	1989	1990	1991	1992
Bauxite[a]	5.0	10.0	0.0	2.0	1.8	0.8	0.3	0.0
Nickel[b]	-	-	-	123.3	135.2	71.0	62.0	37.4
Gold & silver[c]	5.7	148.0	13.7	56.5	30.5	11.3	2.3	1.4
Total	10.7	158.0	13.7	181.8	167.5	83.1	64.6	38.8
Total government revenue[d]	694.7	954.0	554.7	762.1	964.1	860.3	796.8	1353.6
Mineral sector income in per cent of government revenue	1.5	16.6	2.5	23.9	17.4	9.7	8.1	2.9

[a] Estimate of Alcoa's tax payments in 1975, based on export levy of 17 US dollars/ton in 1980, based on 10 US dollars/ton profit 1988 to 1992.
[b] Negligible tax income and no dividend payments 1975-85, annual reports of Falconbridge Dominicana 1988-89 and 1992, estimates by UNCTAD secretariat 1990-91.
[c] Figures from Rosario Dominicana.
[d] International Monetary Fund: International Financial Statistics.

Conditions for the development of non-metallic minerals production, which generally provides a greater scope for development of linkages, would appear to be favourable, given the relatively high rate of economic growth, in particular in the construction industry. However, this sector, which is dominated by the state owned CORDE, suffers from low profitability and lack of investment, and production has stagnated or declined since the late 1980s. Total employment in the non-metallic mineral sector, including cement production which is less labour intensive than the rest of the sector, can be estimated to be less than 5,000 persons[6]. Accordingly, the industry remains too small for the linkages to achieve importance on a national scale.

The mineral sector, in particular the metal mines, is also relatively unimportant in terms of its use of transportation facilities, since the volumes transported are generally small, except for sand and gravel which on the other hand are seldom transported for long distances.

It is also difficult to identify any diffusion of technology or skills taking place from the mineral sector. Unlike the situation in many other countries with similar natural resource endowments, small scale mining of metallic or non-metallic minerals, which is often initiated by former employees of larger mining companies, is almost non-existent.

C. Institutions and legislation

In the Government administration, mineral sector matters come under the Directorate General of Mines within the Ministry of Industry and Commerce. The Directorate General handles most matters concerning mining, including geological survey functions, formulation and implementation of mining legislation and relations with potential foreign investors. Traditionally, negotiations with existing foreign investors, as for instance in the case of the negotiations with Falconbridge described above, are directed by the President's Office. As already mentioned, Rosario Dominicana is owned by the Central Bank. Because of the major importance of the company to the economy, decisions concerning it are taken at the highest level of Government.

The Directorate General of Mines is responsible for the geological mapping of the country. Maps are produced partly to support exploration and partly to provide a basis for planning and decisions - both by Government and the private sector - concerning investment in infrastructure such as roads etc. A map in scale 1:250 000 covering the entire country has been produced. A programme to produce geological, geotechnical and tectonic maps in scale 1:50 000 has been under-way since 1984; these maps are based on the topographical map and aerial photography supplemented by ground based geological observations and geochemical sampling. No airborne or ground geophysical surveys have been carried out. The Directorate General has considerable cooperation with foreign donors, including the United Nations Development Programme, the Organization of American States, and the governments of Germany, Japan, Norway, Sweden and the United States, on a number of detailed mapping/exploration projects. These projects complement the existing resources for geological mapping, which are very scarce[7]. Recently, the European Union has decided to finance geological and geotechnical mapping as well as an airborne geophysical survey and a seismic-tectonic study under the SYSMIN programme.

The Mineral Law dates from 1971. It covers all minerals except oil and natural gas and gravel and sand for construction. Exploration for and production of oil and natural gas are based on older legislation containing provisions for individually negotiated contracts with a great amount of discretion. Production of gravel and sand for construction is also regulated in a separate law. The Mineral Law is similar to mining laws in most other countries, based on a system of concessions where the only slightly unusual feature is the very long duration of exploitation concessions (75 years as opposed to 25 years or less in most other countries). Taxation conditions were defined in the law, and were frozen for 25 years following the granting of the concession. In 1993, however, the tax provisions of the Mineral Law were abolished and taxation of mining enterprises was changed to conform with taxation of enterprises in general. As a result, the corporate income tax for mining companies was reduced from 40 to 30 per cent and may be reduced further. Other taxes defined in the law consist of the annual mining patent which is proportional to the surface of the concession and relatively insignificant, and the royalty or minimum tax which is equal to 5 per cent of export sales. Imports of equipment, machinery and inputs to production may be wholly or partly exempted from import duties and tariffs. The President may also decide that a single rate (*impuesto único*) be applied to all imports of equipment for a specific project. Value-added tax on imported inputs is refunded when products are exported. Provisions for accelerated depreciation for equipment exist. As mentioned above, a special agreement has constituted the basis for taxing of Falcondo.

The Mineral Law provides for the establishment of Fiscal Mining Reserves, which are areas in which any ore deposits can be exploited only by the Government or through special contracts with the Government. The intention behind the Reserves was that the Government would carry out sufficient exploration to identify and delineate deposits and then negotiate exploitation contracts with investors. Lack of resources resulted in a very low level of exploration activity, however. Several Reserves were established earlier, but with one exception, a gold deposit close to the Haitian border, they have now been abolished and opened up for exploration without restrictions. The Mineral Law does not specify any particular conditions with regard to foreign investment.

Criticism of the Mineral Law focuses less on its provisions than on its application. Delays in the granting of concessions are reported to be long and inspection visits by the Directorate of Mines can seldom be undertaken for lack of resources. In spite of the provision in the Mineral Law for periodic reporting by operators on their activities and the provision of geological data to the Government, the reporting obligations are often not adhered to. Unlike the situation in almost all other countries, there are no regulations supplementing the Mineral Law. Consequently, detailed application of the law and the specific conditions under which companies, including foreign investors, can operate, are subject to interpretation of the Mineral Law by the Government authorities and to negotiations. The resulting uncertainty might have the effect of deterring investors, although it appears that potential investors have been reassured by statements made by the Government and by recent events, possibly in particular the changes in Falcondo's taxation conditions.

There is no single environment law in the Dominican Republic. Pieces of legislation are found in several different sectoral laws, including in the Mineral Law, which however contains only a general framework of environmental provisions, essentially prohibiting all pollution[8]. The National Environment Commission is chaired by the President and includes representatives of ministries concerned. It evaluates projects on an *ad hoc* basis. The Directorate General of Mines may set up special commissions to advise it on specific matters or projects. Normally, an environmental impact assessment (EIA) is required for major projects, but no detailed guidelines for the preparation and approval of EIAs exist. The Ministry of Forestry has great influence over environmental policy, since deforestation has been the most important or at least the most visible environmental problem.

Given the lack of detailed regulations and guidelines, together with a lack of resources for monitoring and enforcement by public authorities, environmental management depends mainly on the policies of the mining companies concerned. The absence of government enforcement is to some extent offset by an active public opinion: in some cases, notably the choice of production technology for sulphide ore mining by Rosario, public opinion has succeeded in influencing the technology choices of companies. The main environmental problems associated with mining in the Dominican Republic appear to be acid mine drainage from Rosario's operations, where a local river has been affected, and exploitation of river beds for sand and gravel, which in some cases has resulted in reduced water quality due to siltation. The mineral sector's contribution to deforestation is negligible, since most mining operations take place in non-forested areas. The exception is provided by Falcondo, which however has an extensive revegetation and planting programme yielding a net addition to forest areas.

Notes

1. According to UNCTAD: Commodity Yearbook, the average unit export value for Dominican bauxite during the years 1978 to 1982 was US$ 34.60/ton, which means that the levy accounted for almost half of the export value. The average unit export value for all bauxite exporters during the same period was US$ 27.18/ton, and those for other Caribbean exporting countries (where governments had also instituted policies intended to appropriate a larger share of the resource rent) were US$ 31.94/ton in Haiti (where bauxite mining also ceased in 1982) and US$ 28.62/ton in Jamaica (where bauxite mining decreased dramatically after 1980).

2. For a detailed account of the negotiations between Falconbridge and the Government, see Roger L.M. Dunbar: International renegotiations: the case of the Dominican Republic and Falconbridge, Natural Resources Forum, New York, November 1991.

3. American Metal Market, New York, 7 September 1994.

4. Between 1503, when gold began to be exploited in Hispaniola, and 1520, about 15.5 tons of gold were exported to Spain (figure quoted in Ian Bell: The Dominican Republic, Boulder, Colorado, 1981, p. 329)

5. Mining Journal, London, 18/25 December 1992.

6. In 1985, the last year for which statistics from the Oficina Nacional de Estadística are available, employment in this sector was 5,111. It is likely to have diminished since then.

7. In order to give a general idea of the resources available, it can be noted that in 1988, the only year for which a detailed breakdown of the central government budget is available, the Directorate General of Mines had a budget of 4.4 million pesos, or about 750,000 US dollars at the average official exchange rate for that year. The number of geologists employed by the Directorate General has varied from two to six in recent years. The Directorate has its own laboratory resources which are considered to be more or less adequate for the relatively limited scope of its work.

8. Guidelines for environmental management are provided in articles 56 and 133 of the Mineral Law. Article 56, which deals with mineral processing, states: "Every processing plant should prevent materials emitted from its chimneys from causing damage to third parties and shall attempt the industrial use of such materials or shall neutralize the noxious effect of same so as to avoid pollution of the area." Article 133 concerns emissions in general. It states: "Residue from the exploitation and processing of mineral substances shall be deposited in grounds owned by the concessionaries, and the liquid waste material from the plants, emitted to the atmosphere or in a river, shall be devoid of any substance which may pollute the air or the waters in forms and amounts dangerous to animal or plant life."(Mineral Law of the Dominican Republic, Number 146).

IV. GOVERNMENT POLICIES

A. The general government framework

Decision-making within the Dominican Government is highly centralized. The President directly controls more than half of Government expenditure (53 per cent in the 1993 budget[1]). The President's office also frequently intervenes in the activities of specialized Ministries, not only on matters of strategic policy formulation, but also in decisions that would be expected to be of a routine nature. The extensive use of broad and general legislation and the absence of detailed implementing regulations in many areas clearly facilitate intervention by higher levels of Government in decision-making by lower-level authorities. Accordingly, the exercise of Government authority is frequently influenced by current political events and the development of transparent practices based on precedence or regulation is hampered. Matters that could be decided at lower levels in the Government hierarchy become the subject of negotiation and exercise of discretionary power. In the particular case of mineral investment and production, this is perhaps understandable, considering the importance of operations such as Falcondo and Rosario to the national economy.

The implication of this situation is that stability and consistency in the implementation of policies may suffer. Although the commitment of the Government to stable economic policies would appear to have been demonstrated over the years since 1990, many of the elements of the economic reform package are still awaiting implementation. For instance, the new law on foreign investment, which was intended to be one of the main elements in the economic reform process, has still not been passed by the parliament. While the centralization of decision-making might facilitate co-ordination and interaction between sectors, it also appears to result in delays as implementation of policies is postponed pending the result of deliberations at the highest levels of Government.

B. Policies for the mineral sector

1. The mineral sector as a source of growth

As was discussed in chapters II and III, the mineral sector, particularly in the late 1980s, provided the foreign exchange and Government income that made growth possible and helped in postponing the economic crisis. As a result, however, the continued strength of the mineral sector itself risked being compromised, since the income appropriated from it by the Government precluded the investment necessary to maintain and expand production. Falconbridge managed to ensure the viability of its operation through negotiations with the Government, resulting in agreement on a basis for calculation of its taxes which recognized the need to ensure the availability of funds for continued investment. In the case of Rosario, the situation was allowed to deteriorate to the point where a complete reconstruction of the company was necessary. The solutions to the *taxation problem* referred to in the Introduction were thus not sustainable. The changes that have been introduced appear, however, to allow companies to undertake long-term commitments, as is possibly illustrated by Falconbridge's decision to re-initiate its long-term exploration programme.

In the case of both the existing metal ore mines, the changes in the conditions under which the companies operate, together with the need for large investments at Rosario and the continued low international nickel prices in the case of Falcondo, make it likely that Government income from this source will remain lower than in the past for several years to come[2]. It should be noted, however, that even under the changed operating and taxation conditions, the mining companies remain major tax payers, in particular since they do not benefit from the same generous fiscal incentives as do other growing sectors such as tourism or processing of agricultural products. Furthermore, the figures on Government income from the mineral sector shown in table 10 in chapter III do not include income from indirect taxes paid by mining companies or taxes on employees' wages. Thus, the Government could be expected to collect substantial amounts of rent from the mining industry also under the new arrangements.

Government income is also likely to accrue from new mineral projects that are currently under consideration or development, but this income is not likely to be significant within the next few years. Furthermore, while it appears that the attractiveness of the Dominican Republic from the point of view of geological conditions is not in dispute, the success of new projects will depend on investors' continued confidence in the Government as well as on developments in other countries with which projects in the Dominican Republic have to compete for exploration and investment funds (see section 2 below).

While the mineral sector cannot be counted on for infusions of funds to the Government budget of similar size as in the 1980s, it will remain important as a source of export income, in particular once gold exports regain their previous levels. As seen from table 9 in chapter II, mineral exports constituted a significant part of total exports even after the Rosario mine had been obliged to reduce production. It should also be noted that the figures in table 9 show mineral exports as a portion of total exports including exports from the free zones. A more appropriate indication of the sector's importance might be its share of national exports, which was considerably higher at around 45 per cent in the early 1990s, and which identifies it as the main export oriented activity outside the free zones. With Rosario operating at full capacity, the sector could be counted on to provide 15 to 20 per cent of current account income in the near future, or twice that currently accruing from the free zones in the form of local expenditures by companies in the zones.

The mineral sector has so far failed to make a lasting contribution to economic development in the Dominican Republic in terms of replacing the capital assets embodied in the mineral deposits by other forms of capital. Instead of being invested in the development of infrastructure, new industrial capacity - inside or outside the mineral sector - or improved human resources, the income went towards maintaining levels of consumption and public investment which in retrospect proved to be unsustainable. Thus, a satisfactory solution to the *absorption problem* referred to in the Introduction was not found. The economic reform process now underway may result in changes which would channel mineral sector income to productive investment more effectively. In this context, changes in macro-economic management, which should create an environment more supportive of investment, and in micro-economic policies, which should remove price distortions, will both be important and are likely to promote the establishment of production-consumption linkages. Appropriate budget policies should also help to achieve more efficient solutions to the absorption problem by using the fiscal linkage to channel Government income from the mineral sector to productive investment. Finally, given the variability in

mineral sector income, it might be useful to consider the possibilities of separating Government income from this sector from other income and to accumulate funds during high-income years to be drawn down during years of low income. Such funds could be used to ensure the continued viability and development of the sector and/or as a source of finance for general development projects, aiming in particular to build up capital, both physical and human, in replacement of the natural resource capital consumed through the mining operations.

The potential for using the mineral sector as a source of both foreign exchange and Government income justifies particular attention being paid to the development of the sector on the part of the Government. In particular, the Government has a role to play in facilitating and supporting sector growth. In this context, it will be important both to attract foreign investment and to facilitate the growth of domestic mining companies.

2. Foreign investment

The Government policy on foreign investment has undergone changes in recent years, perhaps partly as a result of the conflict with Falconbridge and the manner in which it was resolved. The Government is now actively trying to attract foreign investment in the mineral sector and several foreign companies have initiated exploration programmes in the country. Taxation conditions have been made more favourable, facilities for drawback of duty payments on imported equipment have been introduced, and the previous policy of reserving certain areas for Government exploration has in practice been abolished (see section C in chapter III). The more stable economic conditions in general have of course also contributed to the increased investor interest.

It appears, nevertheless, that more could be done to attract foreign investment. Investors are critical of the Mineral Law which, in the absence of detailed regulations for its application, is considered to leave too much open to negotiation. While very large international mining companies might in some cases appreciate the potential flexibility of conditions, more precise conditions and greater assurance of the stability of these conditions would probably make it easier for all potential investors, including very large ones, to commit funds for exploration and development. The entry into force of the proposed law on foreign investment would have a similar effect of removing uncertainties, in particular as regards the stability of investment conditions. Finally, the introduction of clear and transparent guidelines and regulations in the area of environmental protection would considerably reduce investor uncertainty.

Another measure that would serve to attract foreign investment would be the upgrading of basic geological information in the form of maps, reports, databases etc. As already mentioned, the geological survey function suffers from an insufficiency of funds. This has resulted in a scarcity of basic geological data such as maps. Due to lack of funds and, in some cases, the non-enforcement of the relevant provisions in the Mineral Law, the data that should be provided by mine operators is not collected and systematized. The assistance that will be forthcoming from the European Union under the SYSMIN programme is likely to improve the situation, but independently of this assistance, the Government could take measures that would improve the availability of information to potential investors. Such measures, which would not entail unreasonable costs, could include making basic geological data more easily and widely available (including the establishment of easily accessible databases) and enforcing reporting requirements more ambitiously.

There is also scope for improvement as regards the benefits that foreign investment in the mineral sector could yield to the rest of the industry, that is, the domestic mining companies. Transfers of skills from foreign investors to domestic companies could be facilitated through the organization of workshops, exchange of personnel and informal training events, and non-proprietary geological information acquired by foreign companies could be made available more efficiently.

3. The domestic mineral sector

The existence of a few large-scale operations in the country has not led to the establishment of medium and small-scale mining companies. The reason for this is partly the absence of mining traditions. Countries with an important medium and small-scale mining industry, such as Australia, Canada, Chile and Peru, generally have a history of mining extending into several decades or even centuries. Another reason is that higher education and training opportunities in mining related disciplines are limited[3]. Only a few Dominicans thus have the experience and knowledge necessary to establish their own mining enterprises. The scarcity of easily accessible geological data may also be an obstacle for smaller enterprises in the sector. Furthermore, it is likely that the abundant business opportunities in sectors such as tourism, combined with high real interest rates, perceived high risks and the significant capital needs of even medium-scale mining ventures have resulted in a low degree of interest in the mineral sector on the part of local entrepreneurs. Finally, the fact that activities such as exploitation of salt and gypsum deposits have been a more or less exclusive government monopoly through CORDE has resulted in a lack of business opportunities open to private domestic companies. The factors just cited (high risks and capital needs) could of course also be said to justify the Government's involvement in mining. However, while this argument would appear to have had at least some validity in the past (in particular with regard to Rosario), it should carry less weight following the economic reforms, an important aim of which is to improve the functioning of capital markets.

A more supportive environment for private sector initiatives in the mineral sector is likely to result from the economic reforms. This could be further assisted by a restructuring or, possibly, at least partial privatization of CORDE's mineral interests. Greater efforts on the part of the Government with regard to improved availability of geological information, training and export promotion would also be likely to have positive effects. Rosario and CORDE could both act as catalysing agents for the development of a private domestic mineral sector in the same way as suggested above in the case of foreign investors, a role which neither of them appears to have played in the past.

C. The economic outlook

As was noted in chapter II, the economic reforms initiated in 1990 appear to have been successful so far. It is, however, legitimate to question whether the growth rates achieved will be sustained in the long term, or whether they are the result of singular circumstances. Clearly, the deregulation of parts of the economy and the micro-economic reforms have yielded benefits in terms of removing allocative inefficiencies due to distortion of prices. Some of these benefits may, however, be non-recurring. As the reform process continues, it will become clearer to

what extent a lasting stimulus has been imparted to the economy. In this context, it is of course of crucial importance that the momentum of the economic reform process is not lost and that general legislation is followed by detailed regulations and administrative reforms.

The Dominican Republic now benefits from improved access for its exports to international markets, mainly as a result of its adherence to the Lome IV convention in 1990, which improved conditions for its exports to the European Union significantly, but also from United States initiatives such as the Caribbean Basin Initiative and the Enterprise for the Americas scheme. The impact of the improved access depends on the extent to which it can be used to reverse the declining trend in regular exports (excluding exports from free zones).

Continued reliance on growth in free zone exports alone may carry significant risks since, given the limited investments of free zone companies, their "staying power" could be doubted. Furthermore, opportunities for the establishment of production-consumption linkages, which would be a normal element of the industrialization process, are mainly missed since most companies in the export processing zones use very few domestic inputs and - by definition - export their output[4]. The exclusion of a large part of the economy from taxation may also have negative implications for fiscal balance. Finally, the lack of growth in total non-traditional exports from outside the zones in recent years - in spite of increased exports of some non-traditional agricultural products (see section B of chapter II) - could be taken as an indication that free zone companies are competing with companies outside the zones for production factors. Present plans for further expansion of the free zones therefore raise the question of whether increased dependence on export industries which exist outside the national economic framework is in the long-term interest of the country. Accordingly, measures to increase exports from outside the free zones would appear to be of high priority.

Capacity constraints and insufficient domestic savings imply that growth in regular exports can only be achieved if transfers and services continue to provide funds available for domestic investment and if conditions are favourable enough to attract direct foreign investment. While remittances from Dominicans abroad and income from tourism can probably be counted on to provide at least a stable and possibly growing flow of funds, capital transfers and direct foreign investment are likely to be more sensitive to the level of real interest rates and to general economic conditions. Since a reduction of real interest rates in order to facilitate investment is an important Government objective, capital transfers should probably not be counted on for funds.

In formulating its policies, the Government will have to take into account which sectors offer the greatest scope for increasing exports. While identification of new products and markets may lead to some increase in the exports of agricultural products, physical constraints in the form of availability of land together with the likelihood that productivity increases in agriculture can only be achieved over the long term imply that the agricultural sector can not be counted on to provide the basis for export-led growth. It is important to ensure that exports of manufactures, whether in the form of processing of domestic agricultural products or based on imported inputs, increase. However, since these exports are at present a small portion of total exports, it will take time for them to achieve major importance, even if efforts to increase their rate of growth are successful. Meanwhile, the mineral sector will continue to make an important contribution to growth and, as argued in section B of this chapter, this justifies particular attention being paid by the Government to the positive development of this sector.

Notes

1. Banco Central de la República Dominicana: Boletín Trimestrial, October-December 1993.

2. The expansion of nickel exports from the Russian Federation in recent years, and the likelihood of these exports continuing at a high level, may exert a downward pressure on nickel prices for several years.

3. Only the *Universidad Católica Madre y Maestra* at Santiago in the northern part of the country educates mining engineers (since the 1970s).

4. While free zone companies with head offices in the Dominican Republic can sell part of their production on the domestic market such sales carry a penalty since they entail paying part of import duties that would have been levied on imported inputs. For this reason, and since very few of the companies are based in the country, domestic sales are insignificant.

Annex

List of persons interviewed

Central Bank
Ms. Natalia Guzmán, Director, Foreign Exchange Department
Mr. Enrique Morales, Deputy Director, Foreign Exchange Department
Ms. Kathia Batista, Deputy Director, Export Receipts
Mr. Cristóbal Brito, Department for Economic Studies
Mr. Julio Sanchez, Department for Economic Studies
Ms. Adria Yorro de Luna, Department for Economic Studies

National Budget Office
Ms. Angelina Neffer Medina de Valverde, Chief, Evaluation and Budgetary Studies Department

National Planning Office
Mr. Pedro Bona Prandy, Director (1994)
Mr. Miguel Sang Ben, Director (1990)
Ms. Rosa Sanchez, Deputy Director

Ministry of Finance
Mr. Nicolas Jiménez, Director of Economic Studies

Secretariat of State for Industry and Commerce
Mr. Francisco A. Valdez Peña, Secretary of State

Directorate General of Mines
Mr. Gerald Ellis, Director General
Ms. Rosa Cepeda, Deputy Director General
Mr. Iván Tavares Castellanos, Chief, Department of Geology
Mr. Arismendy Santana, Chief, Department of Mineral Exploration
Ms. Frieda Pelletier, Legal Adviser

Centro Dominicano de Promoción de Exportaciones
Mr. Manuel Messina, Department of Assistance and Promotion
Mr. Iván A. Cruz Pérez, Systems Engineer

Consejo Promotor de Inversiones Extranjeros
Mr. Frederic Eman-Zadé, Executive Director
Mr. Zoroastro Cucurullo, Economist

Falconbridge Dominicana
Mr. John Clelland, President and Managing Director
Mr. Enrique W. Lithgow, Production Manager, Bonao

Ideal Dominicana
Ramón Cáceres, President

Minera Samanense
Bernardo E. Pichardo Ricart, President

Rosario Dominicana
Mr. Frank J. Piñeyro, Vice-President (1994)
Mr. Eduardo Antún Batlle, Vice-President and Treasurer (1990)
Mr. Victor Beras, Technical Manager
Ms. Gladys Franjul, Project Co-ordinator

UNDP Office, Santo Domingo
Mr. Miguel Bermeo-Estrella, Resident Representative (1994)
Mr. Cesar Miquel, Resident Representative (1990)

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